CLAIMS:

1. An image conversion unit (200) for converting a first image with a first resolution into a second image with a second resolution being different from the first resolution, the image conversion unit (200) comprising:

- a coefficient-determining means (202) for determining a first filter coefficient on basis of pixel values of a group of pixels of the first image; and

- an adaptive filtering means (104) for computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient, characterized in that the image conversion unit (200) comprises control means (204-210) to control the determination of the first filter coefficient.

2. An image conversion unit (200) as claimed in claim 1, characterized in being arranged to compute the first filter coefficient by combining a second filter coefficient, which is based on the pixel values of the group of pixels, with a predetermined filter coefficient, the combining controlled by the control means (210)

3. An image conversion unit (200) as claimed in claim 2, characterized in comprising:

- first computing means (206) for computing a difference between the second filter coefficient and the predetermined filter coefficient;

- second computing means (208) for computing a weighted difference by multiplying the difference with a gain factor; and

- third computing means (204) for computing the first filter coefficient on basis of the weighted difference.

4. An image conversion unit (200) as claimed in claim 3, characterized in that third computing means (204) are arranged to compute the first filter coefficient by adding the weighted difference to the predetermined filter coefficient.

5. An image conversion unit (200) as claimed in claim 3, characterized in that third computing means (204) are arranged to compute the first filter coefficient by adding the weighted difference to the second filter coefficient.

6. An image conversion unit (200) as claimed in claim 1, characterized in that the coefficient-determining means (202) comprises a predetermined Look-Up-Table for translating data which is derived from the pixel values of the group of pixels, into the second filter coefficient, the predetermined Look-Up-Table being obtained by means of a training process.

7. An image conversion unit (200) as claimed in claim 1, characterized in that the coefficient-determining means (202) are arranged to compute the second filter coefficient by means of an optimization algorithm.

8. An image conversion unit (200) as claimed in claim 1, characterized in that the image conversion unit (200) comprises a clipping unit to limit the second pixel value between a minimum and a maximum pixel value found in a neighborhood of the first one of the pixel values of the first image.

9. An image processing apparatus (400), comprising:

- receiving means (402) for receiving a signal corresponding to a first image; and

- an image conversion unit (200) for converting the first image into a second image, the image conversion unit (200) as claimed in claim 1.

10. An image processing apparatus (400) as claimed in claim 9, characterized in further comprising a display device (406) for displaying the second image.

11. An image processing apparatus (400) as claimed in claim 10, characterized in that it is a TV.

12. A method of converting a first image with a first resolution into a second image with a second resolution being different from the first resolution, the method comprising:

- determining a first filter coefficient on basis of pixel values of a group of pixels of the first image; and

- computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient, characterized in comprising control of the determination of the first filter coefficient.

13. A computer program product to be loaded by a computer arrangement, comprising instructions to convert a first image with a first resolution into a second image with a second resolution being different from the first resolution, the computer arrangement comprising processing means and a memory, the computer program product, after being loaded, providing said processing means with the capability to carry out:

- determining a first filter coefficient on basis of pixel values of a group of pixels of the first image;

- computing a second pixel value of the second image on basis of a first one of the pixel values of the first image and the first filter coefficient; and

- control of the determination of the first filter coefficient.